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NOTICE OF ALLOWANCE AND FEE(S) DUE

51444

7590

07/18/2008

Kraguljac & Kalnay, LLC
4700 Rockside Road
Summit One, Suite 510
Independence, OH 44131

EXAMINER

LEE, WILSON

ART UNIT

PAPER NUMBER

2163

DATE MAILED: 07/18/2008

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 10/696,482 | 10/29/2003 | Cheng-Hua Wang | O-158 (D-19) | 6972 |

TITLE OF INVENTION: NETWORK DATA MODEL FOR RELATIONAL DATABASE MANAGEMENT SYSTEM

| APPLN. TYPE | SMALL ENTITY | ISSUE FEE DUE | PUBLICATION FEE DUE | PREV. PAID ISSUE FEE | TOTAL FEE(S) DUE | DATE DUE |
|----------------|--------------|---------------|---------------------|----------------------|------------------|------------|
| nonprovisional | NO | \$1440 | \$300 | \$0 | \$1740 | 10/20/2008 |

THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. **PROSECUTION ON THE MERITS IS CLOSED.** THIS NOTICE OF ALLOWANCE IS NOT A GRANT OF PATENT RIGHTS. THIS APPLICATION IS SUBJECT TO WITHDRAWAL FROM ISSUE AT THE INITIATIVE OF THE OFFICE OR UPON PETITION BY THE APPLICANT. SEE 37 CFR 1.313 AND MPEP 1308.

THE ISSUE FEE AND PUBLICATION FEE (IF REQUIRED) MUST BE PAID WITHIN **THREE MONTHS** FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. **THIS STATUTORY PERIOD CANNOT BE EXTENDED.** SEE 35 U.S.C. 151. THE ISSUE FEE DUE INDICATED ABOVE DOES NOT REFLECT A CREDIT FOR ANY PREVIOUSLY PAID ISSUE FEE IN THIS APPLICATION. IF AN ISSUE FEE HAS PREVIOUSLY BEEN PAID IN THIS APPLICATION (AS SHOWN ABOVE), THE RETURN OF PART B OF THIS FORM WILL BE CONSIDERED A REQUEST TO REAPPLY THE PREVIOUSLY PAID ISSUE FEE TOWARD THE ISSUE FEE NOW DUE.

HOW TO REPLY TO THIS NOTICE:

I. Review the SMALL ENTITY status shown above.

If the SMALL ENTITY is shown as YES, verify your current SMALL ENTITY status:

A. If the status is the same, pay the TOTAL FEE(S) DUE shown above.

B. If the status above is to be removed, check box 5b on Part B - Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and twice the amount of the ISSUE FEE shown above, or

If the SMALL ENTITY is shown as NO:

A. Pay TOTAL FEE(S) DUE shown above, or

B. If applicant claimed SMALL ENTITY status before, or is now claiming SMALL ENTITY status, check box 5a on Part B - Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and 1/2 the ISSUE FEE shown above.

II. PART B - FEE(S) TRANSMITTAL, or its equivalent, must be completed and returned to the United States Patent and Trademark Office (USPTO) with your ISSUE FEE and PUBLICATION FEE (if required). If you are charging the fee(s) to your deposit account, section "4b" of Part B - Fee(s) Transmittal should be completed and an extra copy of the form should be submitted. If an equivalent of Part B is filed, a request to reapply a previously paid issue fee must be clearly made, and delays in processing may occur due to the difficulty in recognizing the paper as an equivalent of Part B.

III. All communications regarding this application must give the application number. Please direct all communications prior to issuance to Mail Stop ISSUE FEE unless advised to the contrary.

IMPORTANT REMINDER: Utility patents issuing on applications filed on or after Dec. 12, 1980 may require payment of maintenance fees. It is patentee's responsibility to ensure timely payment of maintenance fees when due.

PART B - FEE(S) TRANSMITTAL

Complete and send this form, together with applicable fee(s), to: Mail **Mail Stop ISSUE FEE**
Commissioner for Patents
P.O. Box 1450
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 or Fax **(571)-273-2885**

INSTRUCTIONS: This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence including the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

CURRENT CORRESPONDENCE ADDRESS (Note: Use Block 1 for any change of address)

Note: A certificate of mailing can only be used for domestic mailings of the Fee(s) Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing or transmission.

51444 7590 07/18/2008
Kraguljac & Kalnay, LLC
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Independence, OH 44131

Certificate of Mailing or Transmission

I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being facsimile transmitted to the USPTO (571) 273-2885, on the date indicated below.

| |
|--------------------|
| (Depositor's name) |
| (Signature) |
| (Date) |

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| EXAMINER | ART UNIT | CLASS-SUBCLASS |
|-------------|----------|----------------|
| LEE, WILSON | 2163 | 707-100000 |

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).

- ☐ Change of correspondence address (or Change of Correspondence Address form PTO/SB-122) attached.
☐ "Fee Address" indication (or "Fee Address" Indication form PTO/SB-47; Rev 03-02 or more recent) attached. Use of a **Customer Number is required.**

2. For printing on the patent front page, list

- (1) the names of up to 3 registered patent attorneys or agents OR, alternatively, 1 _____
 (2) the name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed. 2 _____
 3 _____

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document has been filed for recordation as set forth in 37 CFR 3.11. Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE

(B) RESIDENCE: (CITY AND STATE OR COUNTRY)

Please check the appropriate assignee category or categories (will not be printed on the patent): ☐ Individual ☐ Corporation or other private group entity ☐ Government

4a. The following fee(s) are submitted:

- ☐ Issue Fee
☐ Publication Fee (No small entity discount permitted)
☐ Advance Order - # of Copies _____

4b. Payment of Fee(s): (Please first reapply any previously paid issue fee shown above)

- ☐ A check is enclosed.
☐ Payment by credit card. Form PTO-2038 is attached.
☐ The Director is hereby authorized to charge the required fee(s), any deficiency, or credit any overpayment, to Deposit Account Number _____ (enclose an extra copy of this form).

5. **Change in Entity Status** (from status indicated above)

- ☐ a. Applicant claims SMALL ENTITY status. See 37 CFR 1.27. ☐ b. Applicant is no longer claiming SMALL ENTITY status. See 37 CFR 1.27(g)(2).

NOTE: The Issue Fee and Publication Fee (if required) will not be accepted from anyone other than the applicant; a registered attorney or agent; or the assignee or other party in interest as shown by the records of the United States Patent and Trademark Office.

Authorized Signature _____ Date _____
 Typed or printed name _____ Registration No. _____

This collection of information is required by 37 CFR 1.311. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, Virginia 22313-1450. **DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450.**

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Determination of Patent Term Adjustment under 35 U.S.C. 154 (b) (application filed on or after May 29, 2000)

The Patent Term Adjustment to date is 356 day(s). If the issue fee is paid on the date that is three months after the mailing date of this notice and the patent issues on the Tuesday before the date that is 28 weeks (six and a half months) after the mailing date of this notice, the Patent Term Adjustment will be 356 day(s).

If a Continued Prosecution Application (CPA) was filed in the above-identified application, the filing date that determines Patent Term Adjustment is the filing date of the most recent CPA.

Applicant will be able to obtain more detailed information by accessing the Patent Application Information Retrieval (PAIR) WEB site (<http://pair.uspto.gov>).

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Customer Service Center of the Office of Patent Publication at 1-(888)-786-0101 or (571)-272-4200.

Notice of Allowability

Application No.

10/696,482

Examiner

Wilson Lee

Applicant(s)

WANG ET AL.

Art Unit

2163

- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 4/7/08.
2. ☒ The allowed claim(s) is/are 1-16.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some* c) ☐ None of the:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
(a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
(b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO/SB/08),
Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application
6. ☐ Interview Summary (PTO-413),
Paper No./Mail Date _____
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____.

/Wilson Lee/
Primary Examiner, Art Unit 2163

EXAMINER'S AMENDMENT

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee. Authorization for this examiner's amendment was given in a telephone interview with Mr. Charles Call on 6/20/08.

1. (currently amended) A relational database management system comprising computer readable storage media for storing instructions executable by a processor for storing and analyzing network data stored in relational tables that describe a set of nodes and links forming a network wherein each of said nodes represents an object of interest and each of said links represents a relationship between two of said nodes, said computer readable storage media storing: system-comprising, in combination:

a generic node table containing a plurality of node table rows each of which contains data describing a given node in said set of nodes,

a generic link table containing a plurality of link table rows each of which contains data describing a link between two nodes in said set of nodes and further identifying the two node table rows in said generic node table that contain data describing each of said two nodes, and

wherein said instructions executable by a processor implement an application program interface which enables external executing application programs to create said generic node table and said generic link table, to store data describing nodes in said generic node table, to store data describing links between said nodes in said generic link table, and to perform a plurality of standard operations on the data in said generic node table and said generic link table.

2. (currently amended) A The relational database management system ~~for storing and analyzing network data as set forth in claim 1 wherein said network is a logical network.~~

3. (currently amended) A The relational database management system ~~for storing and analyzing network data as set forth in claim 1 wherein each of said node table rows contains data specifying a node cost~~

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attribute associated with said given node and wherein each of said link table rows further contains a link cost attribute associated with a link.

4. (currently amended) A ~~The~~ relational database management system for storing and analyzing network data as set forth in claim 3 wherein said standard operations include at least one path identification procedure for analyzing the said network data to identify a particular path having one or more stated cost characteristics.

5. (current amended) A ~~The~~ relational database management system for storing and analyzing network data as set forth in claim 3 wherein said standard operations include at least minimum cost path identification procedure for analyzing the said network data to identify the path that has the minimum total cost from a stated start node to a stated end node.

6. (current amended) A ~~The~~ relational database management system for storing and analyzing network data as set forth in claim 1 wherein said standard operations include analyzing said network data to identify a path consisting of an alternating sequence of nodes and links having defined characteristics.

7. (current amended) A ~~The~~ relational database management system for storing and analyzing network data as set forth in claim 1 wherein said system further includes a path table containing a plurality of path table rows each of which contains data describing a path consisting of an alternating sequence of nodes and links.

8. (current amended) A ~~The~~ relational database management system for storing and analyzing network data as set forth in claim 7 wherein said standard operations include at least one path identification procedure for analyzing said network data to identify a particular path having stated characteristics and for placing information describing said particular path in one of said path table rows.

9. (Currently amended) A ~~The~~ relational database management system for storing and analyzing network data as set forth in claim 7 wherein said system further includes a path-link table containing one ordered set of path-link table rows associated with each given path described in said path table, each of said path-link table rows containing information identifying one link in the sequence of links in said given path.

10. (current amended) A ~~The~~ relational database management system for storing and analyzing network data as set forth in claim 9 wherein said standard operations include at least one path identification

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procedure for analyzing said network data to identify a particular path having stated characteristics and for placing information describing said particular path in one of said path table rows and for placing information describing the sequence of links in said particular path in said path-link table.

11. (Currently amended) A The relational database management system ~~for storing and analyzing network data~~ as set forth in claim 1 wherein said standard operations include loading node and link data into said generic node table and said generic link table[[s]] respectively from a database.

12. (Currently amended) A The relational database management system ~~for storing and analyzing network data~~ as set forth in claim 1 wherein said network is a spatial network and wherein each of said node table rows includes a column for storing the identification of a geometry object which specifies an ordered sequence of vertices that are connected by straight line segments or circular arcs that define the shape and location of one of said nodes.

13. (Currently amended) A The relational database management system ~~for storing and analyzing network data~~ as set forth in claim 12 wherein each of said link table rows includes a column for storing the identification of a geometry object which specifies an ordered sequence of vertices that are connected by straight line segments or circular arcs that define the geometry of one of said links.

14. (Currently amended) A The relational database management system ~~for storing and analyzing network data~~ as set forth in claim 1 wherein each of said link table rows includes a column for storing the identification of a geometry object which specifies an ordered sequence of vertices that are connected by straight line segments or circular arcs that define the shape and location of one of said links.

15. (current amended) A The relational database management system ~~for storing and analyzing network data~~ as set forth in claim 1 wherein each of said node table rows further contains a level column for holding a hierarchy level.

16. (current amended) A The relational database management system ~~for storing and analyzing network data~~ as set forth in claim 15 wherein each of said node table rows further contains a parent column for holding the identification of a parent node within the hierarchy established by said level column.

Allowable subject matter

The following is an examiner's statement of reasons for allowance:

The prior art neither disclose nor suggests the following limitations, in combination with the remaining elements as disclosed in claim 1:

"a generic link table containing a plurality of link table rows each of which contains data describing a link between two nodes in said set of nodes and further identifying the two node table rows in said generic node table that contain data describing each of said two nodes, and wherein said instructions executable by a processor implement an application program interface which enables external executing application programs to create said generic node table and said generic link table, to store data describing nodes in said generic node table, to store data describing links between said nodes in said generic link table, and to perform a plurality of standard operations on the data in said generic node table and said generic link table."

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Correspondence

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Wilson Lee whose telephone number is (571) 272-1824. Papers related to the application may be submitted by facsimile transmission. Any transmission not to be considered an official response must be clearly marked "DRAFT". The official fax number is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Wilson Lee/
Primary Examiner, Art Unit 2163

Application Number**Application/Control No.**

10/696,482

Examiner

Wilson Lee

**Applicant(s)/Patent under
Reexamination**

WANG ET AL.

Art Unit

2163